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IMU

**BULLETIN
OF THE
INTERNATIONAL MATHEMATICAL UNION**

No. 21   November 1983

INTERNATIONAL MATHEMATICAL UNION

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(January 1, 1983 - December 31, 1986)

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REPORT ON THE INTERNATIONAL CONGRESS OF MATHEMATICIANS 1982

Warsaw, Poland, August 16-24, 1983

The Congress was attended by about 2200 participants from 65 countries.

At the opening ceremonies, Professor Czesław Olech, chairman of the
Organizing Committee, was elected President of the Congress and Professor
Władysław Orlicz Honorary President. An address was given by the patron
of the Congress, Professor Aleksander Gieysztor, President of the Polish
Academy of Sciences.

The Fields Medals, whose winners were announced at the IMU General
Assembly in August 1982, were presented to the recipients, Professors
Alain Connes (France), William Thurston (USA) and S.T. Yau (USA) and
the first Nevanlinna Prize in the Mathematical Aspects of Information
Science to Professor Robert Tarjan (USA). After the opening ceremonies,
reports on the work of the medal winners were given by Professors H. Araki
(on Connes), C.T.C. Wall (on Thurston, read by Z. Ciesielski), L. Nirenberg
(on Yau, read by B. Bojarski) and J. Schwartz (on Tarjan).

The Program Committee of the Congress consisted of Professors J.-P. Serre
(chairman), Michael Atiyah, William Browder, Pierre Deligne, Ludvig
Faddeev, Shmuel Winograd, Bogdan Bojarski, Zbigniew Ciesielski and
Stanisław Łojasiewicz.

The work of the Congress was divided into 19 sections with 145 invited
lecturers. Of these, 110 were present. The participants were also
able to give short communications and attend seminars. Invited addresses
and a more comprehensive report of the Congress will be published in
the Proceedings, planned to come out by the end of 1984.

The Executive Committee of IMU had appointed a committee consisting of Professors H. Hogbe-Nlend (chairman), J.W.S. Cassels, J.L. Lions, O. Lehto and Cz. Olech to decide on the travel grants to young mathematicians from developing countries or from countries where severe money regulations exist, to help their attendance to the ICM. Funds for the grants came from donations to the Special Development Fund, from ICSU and IMU. Grants were given to 33 persons from 21 countries. A detailed report will be found at the end of this Bulletin.

At the closing ceremonies, Professor Olli Lehto, secretary of IMU, gave an address describing briefly the activities of the previous General Assembly and thanking the Polish organizers for the excellent work they had done in organizing the ICM under difficult circumstances.

Professor J. Hale welcomed the world's mathematical community to ICM 86 at the University of California, Berkeley. On behalf of the participants, Professor H. Freudenthal and Academician S.M. Nikolskii thanked the Polish organizers. Finally, Professor Czesław Olech, the President of ICM 82, having described the course of the Congress and expressed his thanks to the participants and to all those who had supported and assisted the Organizing Committee, declared the ICM 82 closed.

SCIENTIFIC ACTIVITIES OF THE UNION

MEETINGS SPONSORED IN 1983:

Summer School on the History of Mathematics
        Toronto, Canada, July 25 - August 5, 1983

VIIth International Conference on Mathematical Physics
        Boulder, Colorado, USA, August 2-11, 1983 .

Second International Conference on Operator Algebras, Ideals, and their
        Applications in Theoretical Physics
        Leipzig, DDR, September 25 - October 2, 1983

The Second Inter-African Symposium on Partial Differential Equations
        Yaoundé, Cameroon, September 26-30, 1983

ICMI-JSME Regional Conference on Mathematical Education
        Tokyo, Japan, October 10-14, 1983

MEETINGS SPONSORED IN 1984:

International Colloquium on Vector Bundles on Algebraic Varieties
        Bombay, India, January 9-16, 1984

ICMI-SEAMS Third Southeast Asian Conference on Mathematical Education
        Haad Yai, Thailand, May 1984

ELAM VII (Latin American School of Mathematics)
        Caracas, Venezuela, July 16-27, 1984

Fifth International Congress on Mathematical Education (ICME 5)
        Adelaide, Australia, August 24-30, 1984

Applications for IMU sponsorship and financial support of colloquia should reach the Secretary by March 1 of the year preceding the Colloquium. Even if the full picture of the Colloquium is not clear by that date, an application giving the topic, the names of the officers of the Organizing Committee, if possible the names of the invited speakers, the probable size of the Colloquium, and the probable size of the budget, together with the place where the Colloquium will be held, should be sent in.

IMU LECTURERS

In 1971, the Executive Committee of IMU decided to invite, from time to time, a distinguished and active mathematician, of international standing, to give a set of four to six lectures, on important new developments in mathematics to which the lecturer, directly or indirectly, has made a contribution, and which deserve to be 'surveyed' at some length, for the benefit of younger mathematicians as well as others. The lectures should be given at mathematical centers and they will be published in the L'Enseignement Mathématique. Suggestions for IMU lecturers should reach the Secretary by March 1.

IMU FELLOWSHIP FUND

IMU Fellowship Fund is intended to provide help to advanced level graduate students, especially to those coming from less well-off countries, to take benefit from a long-period stay abroad at a well-known university or institute. Suggestions for possible candidates from the National Committees should reach the Secretary before March 1.

SPECIAL DEVELOPMENT FUND

The Executive Committee of IMU expresses its deep gratitude to the London
Mathematical Society for its donation of SFR 1595 to the Special
Development Fund.

DUES

The IMU Bulletin No. 20 contained a list of dues paid in the year 1982.
By a technical oversight, Portugal was not included in it as it should
have been. The secretariat expresses its apologies.

Pakistan has paid its dues for the year 1982. IMU expresses its pleasure
that a contact with Pakistan has now been reestablished.

MEMBERS

In the ballot conducted among the National Adhering Organizations of IMU,
the status of Poland was changed from Group IV to Group III with 76
votes of the total voting strength of 114 . All votes received were
in favor of the change.

INTERNATIONAL COMMISSION ON MATHEMATICAL INSTRUCTION
Report prepared by A.G. Howson, Secretary of ICMI

In connection with the ICM held in Warsaw ICMI organised a symposium on
'What should be the goals and content of general mathematical education?'.
This was well-attended and well-received, although it is the feeling of
the ICMI Executive Committee that such large-scale symposia are not
most appropriately held concurrently with an ICM, where they create a
conflict of interests. It is also felt that at an ICM it would be more
fitting for ICMI to concentrate on issues relating to teaching at
university level.

A conference sponsored by ICMI and ICSU and organized by the Japan
Society of Mathematical Education in connection with UNESCO, the
National Institute for Educational Research of Japan and the
Mathematical Society of Japan was held in Tokyo from 10 to 14 October,
1983. The theme of the meeting was 'School Mathematics in and for
changing societies'.

A meeting of the Inter-American Conference on Mathematics Education
planned to take place in Mexico in November, 1983, has had to be
postponed for financial reasons. ICMI has, however, agreed to
sponsor the Third Southeast Asian Conference on Mathematical
Education to be held in Thailand in May, 1984.

Plans are now well advanced for the Fifth International Congress
on Mathematical Education which will be held in Adelaide, South
Australia, from 24 to 30 August 1984. The Second (and final)
Announcement has now been published and can be obtained from
ICME 5, GPO Box 1729, Adelaide 5001, South Australia, Australia.

Two more nations have joined ICMI, Costa Rica and Mozambique. Neither is at present a member of IMU.

The International Group for the Psychology of Mathematics Education, an affiliated group of ICMI, held its seventh annual conference in Israel during August 1983.

ICMI plans to embark upon a number of studies, each built around an international seminar. The first four topics which it is proposed to investigate are:

> Mathematics, Computers and Computation,
>
> Mathematics and Cognition,
>
> School Mathematics in the 1990s,
>
> Mathematics as a Service Subject (in cooperation with ICSU-CTS).

Work on the first of these studies has now begun. This is aimed primarily at the university level and seeks to consider how computers have affected our understanding of mathematical concepts, possible desirable changes in undergraduate mathematics curricula and how computers can be used to improve the teaching of traditional topics. The following programme committee has been appointed: J.-P. Kahane (France) (Chairman), R.F. Churchhouse (UK), A.P. Ershov (USSR), J. van Lint (Netherlands), A. Ralston (USA), M. Yamaguti (Japan), F. Pluvinage (France) (Secretary). It is proposed to hold the seminar in Strasbourg in April 1985 and it is hoped that the report will be published early the following year so that it can be presented and discussed at the ICM 1986 in Berkeley.

REPORT FROM THE TRAVEL GRANTS COMMITTEE

ICM 82, Warsaw August 16-24, 1983

The Executive Committee of IMU, at its meeting in April 1981 in Paris, set a committee for distributing travel grants to young mathematicians from developing countries or from countries where severe money regulations exist, to help their attendance to the ICM. The members of this committee were: H. Hogbe-Nlend, chairman, J.W.S. Cassels, O. Lehto, J.L. Lions and Cz. Olech.

The total sum availble was 32 345 US dollars. It consisted of a contribution of USD 14 313 from IMU countries to the Special Development Fund, of an ICSU grant of USD 2000 and of a contribution of USD 16 032 from IMU.

Applicants for grants should be less than 40 years old. A first selection was made out of nearly one hundred candidates and the final list included 33 grantees from 21 countries. 28 grantees received a partial reimbursement of their travel expenses; local support consisted of free accommodation and waiving off of the registration fee. Local support only was given to 5 grantees.

A detailed list of the grantees and the support given is printed in the following appendix.

APPENDIX

LIST OF THE RECIPIENTS OF THE IMU TRAVEL GRANTS, ICM 82

USD in addition to local support

Africa (12):

Country	Name	Amount	Note
Egypt	Dr. A.S. Okb El Bab	700	
Tunisia	Dr. K. Trimeche	700	
Nigeria	Dr. Asibong-Ibe	1000	
Cameroon	Dr. Wouafo-Kamga	1000	
Senegal	Dr. Cherif Badji	1000	
Senegal	Dr. A. Guiro	90	(registration fee)
Ivory Coast	Dr. J. Guidy-Wandja	1000	
Ivory Coast	Dr. Saliou Toure	1120	
Ivory Coast	Dr. S. Bamba	90	(registration fee)
Zimbabwe	Dr. Sergio Salbany	90	(registration fee)
Zimbabwe	Dr. H.A.M. Dzinotyiweyi	1500	
Madagascar	Dr. Pierre Rajaona	1500	

Asia (13):

Country	Name	Amount	Note
India	Dr. Rajendra Bhatia	1000	
India	Dr. S. Poornima	500	
Bangladesh	Dr. Subrata Majumdar	1200	
Vietnam	Dr. Ngo Viet Trung	1500	
Singapore	Dr. Uek Tong Seng	1000	
China-Taiwan	Dr. Bit-Shun Tam	1000	
Hong Kong	Dr. Bun Wong	1000	
Korea, Rep. of	Dr. Dohan Kim	1500	
Iran	Dr. Jafar Zafarani	1000	
Iran	Dr. G. Rsdargahi-Noubary	1000	
Iran	Dr. Javad Tavakoli	355	
Iran	Dr. A.A. Jafarian		local support only
Iran	Dr. Moghaddam		refund of registration fee only

Latin America (4):

Country	Name	Amount
Chile	Dr. Servet Martinez	1500
Cuba	Dr. Abel Castro Figueroa	1500
Cuba	Dr. A. Fraguela Collar	1500
Jamaica	Dr. Paul Bs Peart	1000

Europe (4):

Country	Name	Amount
Romania	Dr. Constantin Niculescu	300
Romania	Dr. Martha Banulescu	300
Turkey	Dr. Yusuf Avci	600
Turkey	Dr. M. Emin Bozhuyuk	300

Total number of grantees :   33 from 21 countries

Total sum available: USD 32 345

Total sum spent: USD 32 345

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and published by the American Mathematical Society. The distributors for the
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